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**Buy or lease: the eternal question.(automobiles)**

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An auto leasing toolbox.

It's easy to understand the allure of auto leasing: Consumers make lower monthly payments; dealers gain volume, move expensive inventory--and keep customers. So it's not surprising to find that one of every three new cars on the road today is leased.

Although lease contracts have become more flexible and can be tailored to meet individual needs, many consumers still prefer to buy rather than lease. CPAs can help clients decide whether to lease or buy by advising them on the fairness of lease fees, dealer profit, the relevance and reliability of lease data and the overall desirability of leasing vs. buying. Financial managers in business and industry also may use such information in their capital budgeting decisions. CPAs and their clients should be aware that dealer profit is highly negotiable and often is a function of the dealership and leasing company selected as well as dealer add-ons such as rustproofing, extended warranty, custom detailing, lease options and financing alternatives.

As CPAs identify new assurance services and develop new competencies, a client-focused mind-set will enable them to offer independent professional services that improve the quality of available information. Although leasing assurance is not one of the original six services outlined by the AICPA assurance services committee, consultation on leasing vs. buying should be considered on a future list of expanded assurance services.

The evidence provided here indicates leasing generally saves money and gives consumers an opportunity to drive nicer, newer cars than they otherwise could afford. Buying, on the other hand, minimizes risk and retains equity. To help clients make the best choice, CPAs need tools that will help them understand the terms, preferences, calculations and cash flows of the auto lease vs. buy decision. The information outlined here provides the elements necessary for a complete 'toolbox,' including background information on terminology, strategies from an auto dealer and other key factors. The dealership tips give CPAs valuable insight into auto industry trade issues affecting lease transactions. A spreadsheet framework for the lease-buy decision provides capital budgeting advice.

#### TRUTH IN LEASING

The truth is, dealers have profited more from leasing than from financing. An Atlanta-based leasing expert says, "On a sale, a dealer makes about \$1,200 to \$1,500 in profit. On a lease, it might be \$2,500 to \$3,000." That's fine, he notes, "unless it's done deceptively."

Complex lease contracts combined with hidden costs complicate the decision to lease or buy. Only recently have key lease terms such as the cost of the car been disclosed to consumers. Laws in a handful of states, as well as Federal Reserve Board Regulation M, which became effective in October 1997, and leasing data available on the Internet are prompting dealers to make increased disclosures. Unfortunately, some fees, including the interest rate the dealer uses to calculate the lease payment, known in the industry as the money factor, still remain unknown to the consumer.

Lease transactions generally are conducted in a language foreign to many consumers. A healthy familiarity with lease jargon, lease calculations and decision analysis is necessary to make a truly informed decision. Many

of the critical terms (cap cost, charges included in the monthly payment and the lease-end residual value) now are disclosed in an easy-to-read format as a result of Regulation M. The glossary on page 27 explains the terms in a typical contract.

When a consumer signs an auto lease, the dealership sells the vehicle to a leasing company. The lease is a contract between the consumer and the car's new owner, the leasing company. The dealership acts as an agent. When the lease is signed, the car dealer profits in four possible ways:

- \* Seasonal rebates (dealer incentives) from the manufacturer, which average \$500 to \$1,000 per vehicle.

- \* "Holdbacks" or credits remitted on a quarterly basis from the manufacturer, which average \$500 per vehicle.

- \* Selling the vehicle to the leasing company.

- \* Financial incentives from the leasing company, such as a reduction in consumer credit criteria to boost lease transactions or a waiver of leasing fees the dealer can retain.

Increased disclosure of lease components is becoming more prevalent, although details on the interest rate and its impact on the consumer usually are excluded. In the last year, five major leasing companies announced they would voluntarily report other lease charges, including title, registration, tag and security fees, first payment and local sales taxes. Auto industry representatives successfully lobbied against requiring disclosure of the money factor, but most dealers will provide the interest rate and other charges used in the contract if asked.

#### EFFECTIVE LEASE STRATEGIES

CPAs need to understand some general lease strategies and industry rules of thumb in order to provide proper assurance to clients in lease-or-buy transactions. The discussion below includes strategies CPAs--and their clients--can follow in negotiating auto leases and evaluating recommendations. To supplement this, the sidebar on page 28 includes strategies provided by Richard Llewellyn, the CEO of Palm Automotive Management, a group of 10 new car franchises in Florida.

Strategy 1: Consider soft issues up front. CPAs should get to know the client's needs. For some, the car buyer's attraction to leasing or buying is tied to his or her desire to avoid risk, to drive a new car or to own. In many cases, the client is predisposed to make a decision without really considering the dollars involved. CPAs should determine the strength of the client's conviction at the outset. A review of 24 consumer decisions revealed leasing and buying offered moderate differences in cash flow. For some consumers, soft issues--see exhibit 1, page 26--may outweigh the cash impact.

#### Exhibit 1: Leasing vs. Buying

Factors	Advantages	
	Buying	Leasing
Minimized net cash outflows.	(*)	(*)
Greater access to new and high-priced autos.		(check)
Gain equity in vehicle and in improvements such as window tinting or upgraded hubcaps.	(check)	
Greater warranty coverage for life of commitment.		(check)
Greater negotiability of excessive mileage and wear and tear imposed by others; no early termination fees.	(check)	
Minimizes ambiguity of commitment made. (Buyers bear the risk of asset holding value and lessees bear the risk of unknown lessor-imposed penalties	(*)	(*)

and undisclosed/inflated fees.)

(\*) This factor can be an advantage in buying or leasing, depending on the circumstances.

Strategy 2: Save some money by leasing. Although lease payments generally are more affordable than loan payments, front- and back-end charges mean clients should look at total cash flows to determine whether leasing truly saves money. In 14 of 24 three-year leases, total cash savings ranged from \$66 to \$3,488 and averaged \$1,272. The message is clear: Savings from leasing are moderate and may not be the deciding factor. Nonmonetary considerations may outweigh monetary ones; does the consumer want to drive a nicer, newer car than he or she could otherwise afford, or does the consumer want equity in the vehicle? Leasing does not make sense if the client intends to drive the car for 10 years.

Consumer leasing offers no tax advantages. If the client uses the car for business, however, CPAs should incorporate the tax consequences (for example, tax savings from the deductible portion of lease payments or depreciation if buying) into the cash flows.

Strategy 3: Lease cars that retain their value. Because lessees borrow a vehicle and pay for the portion of the car's value they use, it's wise to select one that retains its value. For example, consider Carl's choice of leasing a 1998 Mercedes vs. a 1998 Cadillac Seville for 36 months, at an interest rate of 9.12% and no down payment. The 1998 Mercedes E Class Sedan retailed for \$48,140, with a lease residual of 61% (lease end value of \$29,365). The 1998 Cadillac Seville SLS Sedan retailed for \$44,000, with a lease residual of 50%. The Mercedes leases for less money. Why? It retains its value (an 11% higher residual). Leasing the Mercedes saves Carl \$1,651 in total lease payments (36 months at \$45.87 per month). Carl uses a smaller portion of the Mercedes's value and pays less for the lease.

Strategy 4: Resist the allure of lower lease payments. Payments to lease a car are almost always lower than payments to buy the same vehicle, because leases charge only for the portion used (cap cost minus residual). A lower lease payment does not necessarily mean a good deal. Lease payments should be lower than buy payments proportional to the lease residual. For example, Jordan wanted a 1998 Jeep Grand Cherokee Laredo, which costs \$25,300, with zero down, 7.2% interest, payments due monthly over three years, and a lease-end residual of \$15,600. Her projected monthly lease and purchase payments are

Purchase payment	\$784 (due at end of month)
Lease payment	\$392 (due at beginning of month)
Lease savings	\$392 (50% of purchase payments)

Jordan's lease payments would be 50% lower than the purchase payments because the present value of the residual, \$12,578 (50% of the purchase cost), is subtracted from the lease cost.

Strategy 5: Choose the right auto leasing company. A survey of 22 dealerships found them using from one to seven leasing companies. Dealers are apt to provide consumers with information on a select few companies, often the ones providing the best dealer incentives. They may or may not provide the best terms to the consumer. Reverse the scenario: Ask for the fees (security deposit, acquisition fee, money factor, residual, disposition charge) of all leasing companies the dealer works with, and base your choice on this information. The client also should be encouraged to ask about independent leasing companies, such as Curry Auto Leasing, Direct Leasing, Inc., or Superior Leasing, that minimize dealer contact. In such instances, the client typically provides the leasing company with information about the car desired and negotiates lease terms. The independent company then locates a dealership to provide the vehicle the consumer wants.

Strategy 6: Know the lease payment calculation used by the industry. The auto leasing industry uses a payment calculation that approximates, within a dollar, the familiar academic version used in textbooks and on financial calculators. Traditional time-value-of-money calculations are replaced with the industry version: average interest and straight-line principal amortization. To calculate the industry method, assume a vehicle cost, net of down payment, of \$27,186.04, a residual of \$17,976.75, an

interest rate of 6.24% and a 36-month term. The industry method is illustrated in exhibit 2, below.

#### Exhibit 2: Auto Industry Lease Payment Calculation

The auto industry lease payment involves straight-line principal and average interest calculations.

To illustrate, assume a \$27,186.04 cap cost net of down payment, \$17,976.75 residual, .00260 money factor (6.24%), and 36-month term.

Industry payment calculation:

1. Depreciation charge:  $(\text{Cap cost} - \text{Residual}) / \text{Term} =$   
 $(\$27,186.04 - \$17,976.75) / 36 = \$255.82$
2. Lease charge:  $(\text{Cap cost} + \text{Residual}) \times \text{Money factor} =$   
 $(\$27,186.04 + \$17,976.75) \times .00260 = \$117.42$
- 1 + 2 = Dealer's lease payment quote without tax = \$373.24

The 1 depreciation charge represents a straight-line monthly principle payment. The 2 lease charge represents an average monthly interest payment. The averaging of the lease charge is illustrated in a two-step process:

Step 1: Convert money factor to average monthly interest rate

$$\begin{aligned} \text{Money factor} \times 2,400 &= \text{annual interest} \\ \text{rate \%} &= .00260 \times 2,400 = 6.24\% \end{aligned}$$

$$\begin{aligned} \text{Money factor} \times 1,200 &= 1/2 \text{ annual interest} \\ \text{rate \%} &= .00260 \times 1,200 = 3.12\% \end{aligned}$$

$$\begin{aligned} \text{Money factor} \times 100 &= 1/2 \text{ monthly interest} \\ \text{rate \%} &= .00260 \times 100 = 0.26\% \end{aligned}$$

$$\text{Money factor} = 1/2 \text{ monthly interest rate} = .00260 = 0.0026$$

Step 2: Substitute average monthly interest rate for money factor in lease charge

$$\begin{aligned} (\text{Cap cost} + \text{Residual}) \times \text{Money factor} \\ = (\$27,186.04 + \$17,976.75) \times .00260 = \$117.42 \end{aligned}$$

$$\begin{aligned} (\text{Cap cost} + \text{Residual}) \times 1/2 \text{ monthly interest rate} \\ = (\$27,186.04 + \$17,976.75) \times 1/2 = \$117.42 \end{aligned}$$

$$\begin{aligned} (\text{Cap cost} + \text{Residual}) 1/2 \times \text{monthly interest rate} \\ = (\$27,186.04 + \$17,976.75) 1/2 \times .005 = \$117.42 \end{aligned}$$

$$\begin{aligned} (\text{Average balance owed}) \times \text{monthly interest rate} \\ = (\$22,581.40) \times .00520 = \$117.42 \end{aligned}$$

The industry lease payment has two components similar to principal and interest. The \$255.82 depreciation charge represents a straight-line monthly principal payment. The \$117.24 lease charge represents an average monthly interest payment. The combined industry lease payment of \$373.24 is within a dollar of the \$372.71 payment a CPA might compute using the academic method.

Dealer lease quotes should agree with industry method calculations. Hidden components affecting monthly payments are avoided, for the most part, because Regulation M requires full disclosure of payment components (except the money factor).

Strategy 7: Negotiate the lease payment carefully. Four factors determine a lease payment: cost, residual value, interest and the lease term. The car's cost and residual value have the greatest impact; interest

and term have the least. CPAs should be aware that when added to a lease component, dealer profit might appear small when it is divided into monthly payments. Pay attention to the cost and residual (especially the latter, since residuals vary widely among leasing companies) and avoid quibbling over interest rate and term. Exhibit 3, page 30, shows the sensitivity of lease payments to a change in lease terms.

#### Exhibit 3: Lease Payment Sensitivity

##### Lease Component

##### Lease Payment

This exhibit describes the changes in a \$330 lease payment when the cap cost, residual, money factor or lease term increases ((arrow up)) by 1%, 5%, and 25% while the other components are held constant. In reality, the residual, money factor and term are interrelated and do not stay constant (for example, the residual is lowered when the term is extended).

##### Amount

Cap cost--down payment (\$27,186)	\$330.00
1% (arrow up) (\$27,458)	\$337.55
5% (arrow up) (\$28,545)	\$367.76
25% (arrow up) (\$33,983)	\$518.79
Residual (\$20,819)	\$330.00
1% (arrow up) (\$21,027)	\$324.88
5% (arrow up) (\$21,860)	\$304.40
25% (arrow up) (\$26,024)	\$202.02
Money factor (.00319) = Interest rate (7.66%)	\$330.00
1% (arrow up) (.00322) = interest (7.73%)	\$331.53
5% (arrow up) (.00335) = interest (8.04%)	\$337.65
25% (arrow up) (.00399) = interest (9.58%)	\$368.28
Term of lease (36 months)	\$330.00
1% (arrow up) (36.4)	\$328.25
5% (arrow up) (37.8)	\$321.58
25% (arrow up) (45.0)	\$294.62

##### Lease Component

This exhibit describes the changes in a \$330 lease payment when the cap cost, residual, money factor or lease term increases ((arrow up)) by 1%, 5%, and 25% while the other components are held constant. In reality, the residual, money factor and term are interrelated and do not stay constant (for example, the residual is lowered when the term is extended).

##### % (Delta)

Cap cost--down payment (\$27,186)	
1% (arrow up) (\$27,458)	2.29%
5% (arrow up) (\$28,545)	6.56
25% (arrow up) (\$33,983)	27.93
Residual (\$20,819)	
1% (arrow up) (\$21,027)	(1.55)
5% (arrow up) (\$21,860)	(4.80)
25% (arrow up) (\$26,024)	(27.54)
Money factor (.00319) = Interest rate (7.66%)	
1% (arrow up) (.00322) = interest (7.73%)	0.46

5% (arrow up) (.00335) = interest (8.04%)	1.38
25% (arrow up) (.00399) = interest (9.58%)	6.65

Term of lease (36 months)	
1% (arrow up) (36.4)	(0.53)
5% (arrow up) (37.8)	(1.52)
25% (arrow up) (45.0)	(6.15)

Strategy 8: Make sure the car costs the same for purchase or for lease. The negotiated price of the vehicle should be the same, whether the consumer is leasing or buying. Clients should negotiate the purchase price first to establish the value used in lease calculations. Avoid the financial bait-and-switch, or "flip," as it is known by sales personnel, in which the dealer imposes a higher lease price after negotiating the purchase price.

Dealers generally lose money on new cars and make up for it on used cars and in service centers. Because dealers make relatively little profit on purchase or lease transactions, one way for clients to gain leverage and perhaps a better lease deal is to capitalize on their loyalty to the dealership. Lease negotiations should include the offer of a few "carrots" of anticipated service work with the dealership and the prospect of repeat business.

Strategy 9: Take advantage of inflated residuals. Residuals quoted by leasing companies on 24 consumer lease-buy decisions surveyed in 1998 averaged 16% above lease--end residuals published in the industry-recognized Automotive Lease Guide--1998 Residual Percentage Guide. For example, a published residual for a given car at 44% is quoted by leasing companies, on average, at 51%. Inflated residuals lower the monthly payment and may raise the stated lease-end purchase value. Leasing companies often raise residuals as a marketing strategy to attract more customers. Clients are wise to consider a high residual, bank the savings in monthly payments and decline to buy at lease end if the leasing company will not renegotiate the purchase price to conform to current market value at lease end.

Strategy 10: Make sure the lease term matches the driver's needs. Encourage clients to avoid leases with terms longer than needed. Early termination costs money. Some leases require consumers to pay the difference between market value and lease balance, a termination fee (averaging \$200 to \$400) or the remaining lease in full. Regulation M mandates that consumers be warned that early termination costs "may be up to several thousand dollars."

Strategy 11: Monitor lease-signing fees. Consumers should request a full itemization of lease-signing fees. Regulation M requires disclosure of the down payment, security deposit and totals paid for taxes, insurance and lessor charges. A survey of 22 Florida dealers revealed the following range of fees due at signing:

- \* Florida license tag (\$56 to \$185).
- \* Lease acquisition fee (leasing company fee ranging from \$300 to \$600).
- \* Security deposit (first month's rent).
- \* Administrative fee (5 dealers imposed fees of \$100 to \$250).
- \* Florida rental fee (\$60 required by Florida law).
- \* Tire-battery fee (\$6.50 required by Florida law).
- \* Lemon law (\$2 required by Florida law).

Excessive charges beyond these customary fees point to dealer profit that clients can sidestep. Avoid paying surcharges such as administrative fees. Dealers typically refund overcharges only at the consumer's request.

Strategy 12: Try to avoid lease-end penalties. Clients should be encouraged to avoid paying excess up-front mileage fees--the charges dealers impose for odometer readings greater than 12,000 or 15,000 miles annually--unless anticipated usage is heavy. At lease-end, clients can avoid having to pay excess mileage charges or penalties for excessive wear and tear by trading in the vehicle or buying it outright.

Strategy 13: Determine the lessee's equity. Clients should avoid returning the car to the original dealership without first doing some homework by obtaining three alternative trade quotes on the vehicle at

lease-end to determine the extent of the lessee's equity. Equity is created when the consumer has the right to buy the car at a price lower than the current market or trade value. If the consumer trades the car, the trade equity (net of any sales taxes imposed) is applied against the purchase price of the new car to create a cash savings on the new car purchase.

#### WHERE DO I SIGN?

After negotiating both the lease and buy terms and assessing the reasonableness of dealer profit, CPAs and financial managers should advise their clients or employers on whether to lease or buy using capital budgeting techniques. This spreadsheet analysis uses a net-present-value method to evaluate the best option. Cash flows are discounted using the quoted lease-buy rate for payment calculations and the consumer's aftertax savings rate (assumed to be 5%) for all others. This is because dealer payment calculations use the dealer's discount rate while all other cash flows are affected by the consumer's discount rate. The money factor quoted by the dealership is converted to an annualized interest rate (see exhibit 2) for use as the lease rate. Comparing the net-present-value cash flows shows which alternative saves money.

Tax consequences are not included in the consumer lease-buy illustrations described below. If the auto is used for business purposes, CPAs and financial managers should incorporate additional tax issues into the decision framework.

Exhibit 4, page 33, illustrates the cash flows associated with purchasing or leasing a 1998 Chrysler Town & Country LXI minivan. The values come from an actual lease-buy negotiation with a dealer. In this case, the net-present-value analysis shows leasing saves \$2,193.57 over buying. The analysis assumes the money saved in lower lease payments is invested at 5% interest (10% return less 5% opportunity cost of capital) over the life of the lease. However, if excess cash is unavailable, this element of the analysis should be ignored. As such, lease savings may be as low as \$967.72. The cash savings and the less tangible soft issues described earlier should guide the decision to lease or buy.

#### Exhibit 4: Leasing vs. Buying Cash Flow Analysis

Costs or (Revenues)	Buy
Auto cost (1998 Chrysler Town & Country LXI, \$32,685 MSRP)	
1 Negotiated cost of car (purchase price or cap cost)	\$30,400.00
Additional costs	
2 Cash down payment or trade (negotiable)	\$3,213.96
3 Fees paid in cash up front	
* Tag and "fees" (profit hidden here-amount should be < \$170)	\$225.29
* Documentary stamps	\$114.40
* Lease acquisition fee	
* Security deposit	
4 Present value of sales tax paid (varies by state--6% used here)	\$1,824.00
Assessed on portion of vehicle paid for by consumer	
* Buy: ((1) x 6%)	
* Lease: ((2) x 6%) + (PVAD(1) of {(10) x 6%})	
Monthly costs	
5 Residual value (dealership quote of 55% of MSRP)	
6 Interest rate (convert the money factor to an interest rate)	
money factor quoted at .00260 x 2400 = 6.24%	9.00%
7 Cost of capital (after tax-saving rate)	5.00%
8 Term	36 months
9 Loan payment:	\$864.51

$\text{payment} \times \text{PVA} = (\text{purchase price} - \text{down payment})$   
 $= ((1) - (2)) / \text{PVA}$   
 10 Dealer's lease payment quote  
 (excluding sales tax)  
 11 Industry calculation (used for  
 reasonableness of (10))  
 12 Present value of payments: (PVA of (9)).  
 or (PVAD of (10))

\$27,186.04

## Other costs (Revenues)

13 Present value of interest earned  
 on savings in lease payment (2)  
 $(\text{PVAD of } \{(9) - (10)\}) - (\{(9) - (10)\} \times (8))$   
 14 Present value of refunded  
 security (that is, deducting  
 forgone interest) PV of \$425  
 15 Present value of lease disposition charge  
 PV of \$275

## Cost after 36 months

$(2 + 3 + 4 + 12 + 13 + 14 + 15)$

\$32,563.69

Less present value of trade-equity

(\$16,342.50) in 36 months (3)

\$14,070.50

Your total cost

\$18,493.19

Lease savings

## Costs or (Revenues)

## Lease

Auto cost (1998 Chrysler Town & Country

LXI, \$32,685 MSRP)

1 Negotiated cost of car (purchase price  
 or cap cost)

\$30,400.00

## Additional costs

2 Cash down payment or trade (negotiable)  
 3 Fees paid in cash up front  
 \* Tag and "fees" (profit hidden here-amount  
 should be < \$170)  
 \* Documentary stamps  
 \* Lease acquisition fee  
 \* Security deposit  
 4 Present value of sales tax paid (varies  
 by state--6% used here)  
 Assessed on portion of vehicle paid  
 for by consumer  
 \* Buy:  $((1) \times 6\%)$   
 \* Lease:  $((2) \times 6\%) + (\text{PVAD}(1) \text{ of } \{(10) \times 6\%\})$

\$3,213.96

\$288.89

\$495.00

\$425.00

\$943.16

## Monthly costs

5 Residual value (dealership quote of 55% of MSRP)  
 6 Interest rate (convert the money  
 factor to an interest rate)  
 money factor quoted at  $.00260 \times 2400 = 6.24\%$   
 7 Cost of capital (after tax-saving rate)  
 8 Term  
 9 Loan payment:  
 $\text{payment} \times \text{PVA} = (\text{purchase price} - \text{down payment})$   
 $= ((1) - (2)) / \text{PVA}$   
 10 Dealer's lease payment quote  
 (excluding sales tax)  
 11 Industry calculation (used for  
 reasonableness of (10))  
 12 Present value of payments: (PVA of (9))

\$17,976.75

6.24%

5.00%

36 months

\$373.24

\$373.24



or (PVAD of (10)) \$12,288.60

#### Other costs (Revenues)

13 Present value of interest earned on savings in lease payment (2) (PVAD of {(9) - (10)}) - ({(9) - (10)} x (8))	(\$1,225.85)
14 Present value of refunded security (that is, deducting forgone interest) PV of \$425	(\$365.91)
15 Present value of lease disposition charge PV of \$275	\$236.77
Cost after 36 months (2 + 3 + 4 + 12 + 14 + 15)	\$16,299.62
Less present value of trade-equity (\$16,342.50) in 36 months (3)	
Your total cost	\$16,299.62
Lease savings	\$2,193.57

(1) PV denotes present value, A = annuity and D = due.

2 Cash flow differences between the buy-lease alternatives create opportunities for interest savings. The most significant difference is identified here; others (such as up-front fees) are ignored for simplification.

3 The trade-equity (residual) represents the industry recognized three-year residual published in the Automotive Leasing

Guide--1998 Residual Percentage Guide. The May 1998 residual for this auto was 50% of the MSRP. Avoid using the residual value quoted by the dealer.

#### SELLING THE SERVICE

Many clients compare a visit to an auto dealer to buy or lease a car with a trip to the dentist. Regular visits are necessary, but not eagerly anticipated. As a result, CPAs may find their offer of independent, objective and informed help with lease negotiations and purchase decisions an easy sale. Most of a CPA firm's existing clients will need such help at least every two or three years. In addition, the service can be marketed outside the firm's existing client base using traditional direct mail campaigns, ads in auto-related publications or on Internet Web sites or even by renting a booth at a local auto show.

#### NEW ASSURANCE SERVICE

Armed with the financial analysis skills needed to do the job, CPAs are uniquely qualified to provide clients with assurances on auto leasing vs. buying. Automobile consumers and the CPAs who advise them should consider both quantitative and qualitative measures and carefully negotiate all fees, just as when they purchase a home or sign any other contractual obligation. In the end, the ultimate choice to lease or buy involves an informed understanding of the financial and other factors of each alternative.

#### EXECUTIVE SUMMARY

\* ONE OF EVERY THREE NEW CARS ON THE ROAD is leased, and consumers are confronted frequently with the decision of whether to buy or lease their vehicles. CPAs are in a good position to use their assurance skills to help consumers make this decision, offering advice on the reasonableness or fairness of lease fees, the resulting dealer profit, the relevance and reliability of data and the overall advisability of leasing or buying.

\* LEASING TRANSACTIONS REMAIN COMPLICATED. Only recently have the meanings of key lease terms been disclosed to consumers, some as the result of Federal Reserve Board Regulation M, effective as of October 1997. Some fees, including the interest rate (money factor), generally remain unknown unless the consumer asks.

\* CPAs AND THEIR CLIENTS CAN USE ANY OF A NUMBER of strategies to make negotiating the purchase or lease of a vehicle easier. While leasing generally saves money, it's important to consider other factors--some of them unrelated to cost--in deciding whether to buy or lease a car.

\* TO HELP CONSUMERS MAKE THE BUY-OR-LEASE decision, CPAs can apply capital budgeting techniques. If appropriate, tax consequences should be

considered as well.

Auto Leasing Resources on the Internet  
 Background and advice [www.leasesource.com/](http://www.leasesource.com/)  
 Long list of links, including international information  
[www.autoguide.net/finance/leasing.html](http://www.autoguide.net/finance/leasing.html)  
 Independent leasing [www.autoflex.com/](http://www.autoflex.com/)  
[autobytel.com/Se/Ly/autoleasing.html](http://autobytel.com/Se/Ly/autoleasing.html)  
 Used car leasing [www.advernet.com/aboutus/linc.html](http://www.advernet.com/aboutus/linc.html)  
 Auto Leasing Glossary

Terms	Typically Disclosed?
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Up-front lease issues

Lessor	(check)
--------	---------

Lessee	(check)
--------	---------

Lease payments issues

Cap cost	(check)
----------	---------

Cap cost reduction	(check)
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Residual	(check)
----------	---------

Money factor	
--------------	--

Term	(check)
------	---------

Depreciation charge	(check)
---------------------	---------

Lease charge	(check)
--------------	---------

Sales tax charge	(check)
------------------	---------

End-of-lease issues

Open-ended lease	(check)
------------------	---------

Close-ended lease	(check)
-------------------	---------

Purchase option	(check)
-----------------	---------

Security deposit	(check)
------------------	---------

Gap insurance	(check)
---------------	---------

Excess mileage charges	(check)
------------------------	---------

Excess wear and tear	(check)
----------------------	---------

charge	
--------	--

Early termination	(check)
-------------------	---------

Other terms

MSRP	(check)
------	---------

APR	
-----	--

Terms	Meaning
-------	---------

Up-front lease issues

Lessor	The leasing company to which the car dealership assigns the rights to the contract.
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Lessee	Consumer.
--------	-----------

Lease payments issues

Cap cost	The cost of the car to be leased. May include the selling price and additional fees capitalized; disclosure of the cap cost may not be itemized.
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Cap cost reduction	The cash paid up front to reduce payments.
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Residual	The fixed future value of the car at lease end.
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Money factor	The interest factor -- quoted as a decimal such as .0031. Easily converted to an annual interest rate by multiplying by 2,400 (.0031 x 2400 = 7.44%). The money factor is half the monthly interest rate.
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Term	The number of months covered under the lease.
------	---

Depreciation charge	The portion of the payment reducing the principal lease obligation.
Lease charge	The portion of the payment covering interest.
Sales tax charge	The portion of the payment covering sales tax.

End-of-lease issues	
Open-ended lease	Lessee guarantees the value of the car at lease end.
Close-ended lease	Lessee does not guarantee the residual amount.
Purchase option	Option to buy at lease end.
Security deposit	Good-faith payment guaranteeing at lease end the proper condition of a vehicle that may (not) be returned. Averages one month's lease payment.
Gap insurance	Coverage of the "gap" between the insurance policy proceeds and the lease balance owed if the car is stolen or destroyed. Doesn't reimburse cash outlays made. May be free or cost \$200 to \$400.
Excess mileage charges	Payment at lease end for decreased residual value (usually around 10 cents per mile).
Excess wear and tear charge	Same as above.
Early termination	Terminating the lease contract before its full term.

#### Other terms

MSRP                      Manufacturer's suggested retail price.

APR                        Annual percentage interest rate.

RELATED ARTICLE: Additional Strategies from an Auto Dealer

Here is more information on some of the topics discussed in the text provided by auto dealer Richard Llewellyn.

Strategy 1: Consider soft issues up front.

Leasing minimizes the risks associated with driving a car because leased cars often have "gap" insurance protecting against collision and theft losses. At lease end, the consumer walks away from the lease if the lease buyout is too high or receives equity back through trade or purchase if the lease buyout is low.

Strategy 5: Choose the right auto leasing company.

Leasing companies must provide the same quotes to all dealers within a region. For example, World Omni, a leasing company, must quote the same residual, money factor and acquisition fee to all dealers. Dealers have no contractual obligation to pass the same terms along to consumers. This permits undisclosed dealer add-ons, but market and competitive forces minimize abuses. Quotes among lease companies will vary due to different actuarial assumptions employed.

Strategy 8: Make sure auto cost is the same for purchase or lease.

On average, dealers lose money in the new car sales-leases department (due to high sales commission costs) but make up for the losses in other areas (used cars, body shop, parts and service).

Strategy 11: Monitor lease-signing fees.

Leasing companies may lower the lease security deposit or money factor as a dealer incentive. The dealership may or may not pass the savings along to the consumer. The disclosed security deposit may be paid to the leasing company or retained by the dealership as profit. As an example, dealers that advertise "autos at zero above cost" may fail to mention \$875 in administrative fees (dealer profit) charged at lease signing. Scrutinize total costs carefully.

Strategy 12: Try to avoid lease-end penalties.

There are no penalties if the leasing company does not get the car back. Under this scenario, someone buys the car, either the dealership

through a trade or the consumer through a purchase. The new owner bears the risk of excess mileage and wear and tear.

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**Purchase vs. lease of an automobile.**

Levy, Gregory M.

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ABSTRACT: The aim of the automobile lease-purchase decision is to obtain the car at the lowest possible aftertax cost. One consideration is how long the car will be kept. A more short-term customer might want to lease since the lessee pays only for depreciation during the lease term, plus interest. The greater the car's residual value, the better the transaction is for the lessee. The tax laws also permit larger deductions if a business-use car is leased rather than purchased.

TEXT:

Unfortunately, there are no general rules about who should buy and who should lease an automobile. Each situation must be analyzed on a caseby-ease basis. For most individuals, the objective is to obtain a car for the lowest possible aftertax cost while avoiding any unpleasant surprises.

#### PURCHASING

Purchasing a car is a straightforward transaction. Ignoring trade-ins, the car's price is known and the buyer either pays cash or makes a down payment and finances the balance. It's advisable for potential buyers to check carloanrates and terms with local lenders and compare them with dealer financing. With many car dealers offering low-rate financing or rebates, potential buyers may do better taking rebates and financing the purchase themselves. And it's important to do more than just compare monthly payments; the annual percentage rate (APR) on each financing option must be computed.

#### LEASING

Leasing a car can be a complicated transaction; sophisticated financial calculations may be required to determine the best option. The first step in car leasing is the same as in buying-shop for the best deal. And just as a car's price and options are negotiable for a purchaser, lease terms also can be negotiated. To make this easier, the sidebar on page 39 defines some key leasing terms.

When analyzing a lease transaction, it's best to begin by finding out the car's capitalized cost. This is essentially the amount for which the dealer is selling" the leased vehicle. This should compare favorably with the cost of the same car in a cash transaction.

The next critical factor is the car's residual value (expected worth when the lease expires). This amount frequently is expressed as a percentage of the car's original price. The residual value should compare favorably with the book values of corresponding used cars when the lease expires.

The car's residual value is a key element that will make monthly lease payments less than the corresponding payment to buy the same car. When a car is purchased outright, the buyer pays for the entire vehicle; with a lease, the lessee pays only for depreciation during the lease term, plus an interest equivalent. The greater the vehicle's residual value, the better the lease transaction will be for the lessee.

A high residual value is the principal reason why luxury earmakers such as Mercedes Benz can advertise monthly lease payments that seem so low. In a manufacturer-sponsored lease transaction, when the dealer is motivated to "do the deal," the car's residual value may be set higher than its historical resale value to reduce lease payments. The remaining data needed to analyze a lease-monthly payment and lease term-are obtained easily; no calculations are required.

#### LEASE EVALUATION

Armed with the necessary independent variables, the lease's implicit interest rate (the rate at which the lessor "lends" money to the lessee) can be calculated. A financial function calculator or computer program likely will be necessary to make the computation. The implicit interest rate should compare favorably with the rate lenders are currently offering on car loans.

It's also possible to evaluate the proposed transaction by doing a comparative present-value analysis of buying a car versus leasing. The net present value of a purchased car can be compared to the net present value of future lease payments. Exhibit 1, above, makes such a comparison.

#### EDUCATED CONSUMERS

Educated consumers will find important information in the small print at the bottom of automobile lease advertisements (and hopefully in the lease itself).

- \* Excess mileage charges. Most leases specify a per-mile charge (often \$. 10 to \$.15) on mileage exceeding the allowance (usually 45,000 to 50,000 miles). This should be compared to the vehicle's estimated use. For frequent drivers, the added cost can often be considerable.

- \* Security deposit. Most leases require a refundable deposit equal to one month's (or more) lease payment. The time value of money must be considered because the lessee loses use of the funds for a period of time. The larger the required deposit, the less attractive the deal.

- \* Capitalized cost reduction. This is a fancy term for a nonrefundable payment required at lease inception. The higher the amount, the lower the advertised monthly lease payment.

#### OTHER LEASE TERMS

Not all lease terms are included in promotional material. Prospective lessees may need to do some additional homework to find out about other terms, including

- \* Availability of gap" insurance. In the event the car is stolen or damaged beyond repair, conventional insurance may cover only its replacement value, which could be thousands of dollars less than the unpaid lease balance. For a relatively small one-time premium, the lessee often can insure against this risk.

- \* Lease termination before expiration date. How much would it cost the lessee to terminate a three year lease after only two years? Some lease agreements provide for prohibitively high early-termination payments, making the lease essentially noncancelable.

- \* Excess wear-and-tear charges. How is "excess" defined? How are the charges calculated?

#### TAX CONSIDERATIONS

If the car is to be used for business, income tax considerations take on added importance.

Since 1984, federal tax laws have significantly reduced the opportunities and benefits of claiming deductions for business use of a

car. In addition to tougher substantiation requirements, deductions have been curtailed. For a purchased vehicle used 100% for business, Internal Revenue Code section 280F limits depreciation deductions to

- \* First year: \$2,660.
- \* Second year: \$4,200.
- \* Third year: \$2,550.
- \* Each succeeding year until fully depreciated: \$1,475.

For a vehicle used at least 50% for business, the deduction is based on the business-use percentage multiplied the amounts listed above. If business use is below 50%, no depreciation deduction is allowed. Under these rules it obviously will take many years to write off a luxury car. If the vehicle purchase is financed, interest will be fully or partially deductible based on the business-use percentage. Interest incurred to purchase a car for personal use is no longer deductible.

Although Congress intended to treat car lease transactions on terms similar to purchases, leases have an inherent advantage. In general, if a business-use vehicle is leased by a company (the recommended approach) or by an individual, the laws favor the lease transaction over an outright purchase by allowing larger annual deductions.

A business leasing a car can deduct the full Payment subject to addback of an amount taken from an annually issued IRS table under temporary regulation section 1.280f-7T(a)(2)(iv), multiplied by the business-use percentage). Personal use is reported by the company on the employee's W-2 form as additional compensation. The amount is derived from the IRS'S table of annual lease values and multiplied by the personal use percentage.

To determine the additional compensation the employee must declare, the employee should use the IRS table of annual lease values based on the car's fair value at lease inception. The table amount is multiplied by the employee's personal-use percentage.

An employee who personally leases a business-use car deducts a portion of the lease payment based on the business-use percentage. Individual lessees also are subject to the income add-back under temporary regulation section 1.280f-7T(a)(2)(iv).

#### THE BOTTOM LINE

Leasing a car requires at least as much shopping and negotiation as buying one. Unfortunately, there is no shortcut to a good deal.

Among the factors favoring a cash purchase are

- \* The buyer intends to keep the car for a long time, perhaps five years or more.

- \* The car will not be used for business.

- \* The buyer prefers to avoid making monthly payments.

Among the factors favoring a lease are

- \* The car will be replaced in a relatively short period of time, say within four years or less.

- \* The car will be used partially or totally for business.

- \* The buyer prefers to make monthly payments or does not have the cash to buy the vehicle outright.

Exhibit 2, page 38, compares a business's purchase and lease of an automobile.

#### KEY LEASING TERMS

- \* Capitalized cost. Car value at lease inception. This is synonymous with present value or the price of the car in an outright sale.

- \* Closed-end lease. A lease that provides, at expiration, for the lessor to take back the car. The lessee has no further rights or obligations.

- \* Implicit interest rate. The unstated interest being charged the lessee. Mathematically, it is the rate that causes the sum of the present values of the rents payable and the residual value to equal the capital cost (present value) of the leased vehicle.

- \* Lease term. The time period the lease is in effect. In an open-end lease. A lease that provides, at expiration, the opportunity for the lessee to purchase the car or to extend the lease term.

- \* Residual value. The estimated car value at lease expiration. The amount may be either guaranteed or unguaranteed. If guaranteed, the lessor

assures the lessee the car will be worth at least the agreed-on amount at lease expiration; if unguaranteed, the lessee bears the risk of the car's final value.

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## The Net Present Value – NPV

This function is similar to IRR but calculates the equivalent present value of a range of future cash flows, given an interest rate. In other words, what would all those cashflows be worth today assuming a required IRR if you had a single lump sum instead, replacing the future streams of incomes and outgoings.

If the cashflow schedule is the same one as that used for calculating the IRR, and the IRR is used as the interest rate in NPV, the NPV will be exactly zero.

One can compare and evaluate different cash flows by comparing their Net Present Values. In some ways, the NPV as a cash lump sum is easier to visualise, and is particularly useful when evaluating the costs of switching mortgages as you must do before making a re-mortgage decision. It can be likened to a cashback calculation. But you must be careful to use the correct, relevant interest rate assumption.

Some examples of the NPV in action are shown in the "Loan Comparator" spreadsheet and in Part II. But as another example, let's look at the same two schemes described above when comparing IRRs and APRs.

The results in the table below show that scheme B is better value over six years because the IRR is lower as before, despite the APR being higher.

Scheme	IRR (6 yrs)	APR (25 yrs)	NPV over 6 yrs (Cashback)
A: 7% pa throughout the term	7.2 % pa	7.2 % pa	£1,100
B: 5% pa for 2 yrs, 7.5% thereafter	6.8 % pa	7.3 % pa	£-1,105

But the NPV of scheme A over six years compared to scheme B is £1,100. This means that if there was a cashback of £1,100 with scheme A, the IRR would then be identical to scheme B. Alternatively, if there was an additional lump sum fee of £1,105 on scheme B, (ie a negative cashback) it would equate to the IRR for scheme A.

So you can visualise scheme A being around £1,100 more expensive – an easier figure to imagine than the IRR difference. Another way of looking at the comparison is that you would need a monthly payment reduction of £18.51 for the six years with scheme A to make it comparable: this monthly alternative is also shown on the spreadsheet.

### Accuracy warning

And now some words of caution. Any *future* interest rates data that you enter in these calculators, such as the "Loan Comparator", are usually merely a guess as to what those rates will be in practise. In real life, interest rates are hard to predict; in fact impossible over a long period unless fixed at outset. Any comparison tool is only as good as the guesses made for the relevant variables.

Fortunately, in most cases, while the actual numbers, such as the IRR, may turn out to have been inaccurate in practise, the *comparisons* might well remain valid. In other words, if future rates turn out to be higher or lower than predicted, the effect should be fairly consistent on the comparisons if the margins remain consistent, so the value-for-money ranking should therefore not change.

Where this may *not* be true is with loans with an initial fixed rate, changing to a variable rate later, when comparisons include both rates within the term range of a calculation. A different variable rate guess can then easily change the value-for-money order.

### Margin lock or linked rates

Some newly launched lenders offer initially attractively low variable rates and incentives just to get



established, but may then increase their margins later on, once they have grown large enough and become established. Once a product has been bought, borrowers soon become complacent, and seldom re-check the validity of their first decision and seldom notice widening margins.

This somewhat cynical observation tends to apply to many new product launches, which is done in order to attract public and media interest. The exception is with products where the interest rate is specifically linked (usually by a fixed margin) to an independent base rate, such as Bank of England Base Rate, or LIBOR, the London InterBank Offered Rate. With such linked rates, the lender's margin is effectively locked in throughout the loan, so whatever happens in future, the interest rate formula will always remain the same.

For example, a lender might advertise a rate that is always a fixed 1.5% above 3 month LIBOR. You can look up this rate in the newspapers as it is independently set. The only downside is that your payment will then alter every time the linked rate changes, which could also be every three months. On the other hand, the lender is then committed to that margin. This might seem attractive but new digital technology is constantly reducing the lender's administration costs. It could well turn out that some lender in future might offer an even lower margin.

In summary, although the calculation results are themselves very accurate, real life may turn out to be different. Market forces may eventually lower the projected variable rates, which, at worse, could invalidate your analysis of the best-buy. You can minimise this happening by trying a range of guesses before finally making up your mind. Life wasn't meant to be too easy.

**Next Page**